

What is claimed is:

1. A tension mask for a color cathode-ray tube, comprising:
a plurality of parallel strips separated by a predetermined distance from each other;
a plurality of real bridges intersecting adjacent strips among said plurality of parallel strips
to define slots, the slots accommodating electron beams to pass through; and
a plurality of dummy bridges located in the slots, partially extending between but not
intersecting the adjacent strips, said plurality of dummy bridges having projections facing each other
without touching, said dummy bridges having an etching boundary located below the middle of said
strips.
2. The tension mask of claim 1, with said plurality of real bridges being recessed by a
predetermined depth from the top surface of said real bridges, and the thickness of each of said real
bridges being smaller at the center than at the periphery of said real bridges.
3. The tension mask of claim 2, with the thickness of each of one said real bridges at the
recessed center of the real bridges being approximately the same as the distance from the bottom of
the strips to said etching boundaries of said dummy bridges.
4. The tension mask of claim 1, with each of said plurality of real bridges having a
planar top surface.

1 5. The tension mask of claim 4, with the top or bottom surface of said real bridges being
2 at the same level as the surfaces of said adjacent strips.

1 6. The tension mask of claim 1, with the distance from the bottom of said strips to the
2 etching boundaries of said dummy bridges being 0.25 times smaller than the thickness of said strips.

1 7. The tension mask of claim 6, with the thickness of each of said real bridges at the
2 recessed center of said real bridges being approximately the same as the distance from the bottom
of said strips to the etching boundaries of said dummy bridges.

1 8. The tension mask of claim 1, with the distance from the top of the strips to the etching
boundaries of said dummy bridges being larger than the distance from the bottom of the strips to the
etching boundaries of said dummy bridges, the top of the strips being on the electron beam emitting
side and the bottom of the strips being on the electron beam entering side.

1 9. The tension mask of claim 1, with the relative position of each of the slots at the beam
2 entering side with respect to the beam emitting side of said tension mask being shifted toward the
3 center of said tension mask as the locations of the slots become closer to the periphery of said
4 tension mask.

1 10. The tension mask of claim 9, with the relative position of each of the slots at the beam

entering side being shifted toward the center of said tension mask by etching a portion of each slot on the beam emitting side with a predetermined width, and shifting an etch of a portion of each slot on the beam emitting side with a predetermined width towards the center of said tension mask with respect to the etch of the portion of the slot on the beam emitting side, the etch on the beam emitting side and the etch on the beam entering side forming one of the slots of said tension mask.

11. The tension mask of claim 9, with the center of said tension mask being a center line accross a width of said tension mask.

12. The tension mask of claim 11, with the relative position of the gap between the facing dummy bridges being shifted toward the center or the periphery of said tension mask as the locations of said dummy bridges become closer to the periphery of said tension mask.

13. The tension mask of claim 12, with the relative position of the gap between the facing dummy bridges being shifted toward the center or the periphery of said tension mask according to the reduction of the clipping of the electron beams.

14. The tension mask of claim 11, with the width of each of said dummy bridges along said strips becoming narrow as the locations of said dummy bridges come closer to the periphery of said tension mask.

1 15. The tension mask of claim 12, with the width of each of said dummy bridges along
2 said strips becoming narrow as the locations of said dummy bridges come closer to the periphery of
3 said tension mask.

1 16. The tension mask of claim 1, with the area of each of the dummy bridges becoming
2 smaller as the locations of the dummy bridges come closer to the periphery of the tension mask.

1 17. The tension mask of claim 1, with said adjacent strips having rounded portions to
2 reduce the clipping of electron beams.

1 18. The tension mask of claim 1, with the width of each of the slots at the electron beam
2 entering side being wider than at the electron beam entering side.

1 19. The tension mask of claim 1, being manufactured by an exposure mask comprising
2 a pair of upper and lower exposure masks to be aligned over the top and bottom surfaces of a steel
3 foil, respectively, to accommodate exposure of photosensitive layers deposited on said steel foil, said
4 upper exposure mask having a pattern including a series of parallel upper light transmission portions
5 arranged in lines, said lower exposure mask comprising:

6 a pattern including a series of parallel lower light transmission portions arranged in lines;
7 a plurality of first light shielding portions intersecting adjacent lower light transmission
8 portions among said series of parallel lower light transmission portions; and

9 a plurality of second light shielding portions partially extending between the adjacent lower
10 light transmission portions.

1 20. A tension mask for a color cathode-ray tube, comprising:
2 a plurality of parallel strips separated by a predetermined distance from each other;
3 a plurality of real bridges intersecting adjacent strips among said plurality of parallel strips
to define slots accommodating electron beams to pass through;
5 a plurality of dummy bridges located in the slots, partially extending between but not
intersecting the adjacent strips, said dummy bridges facing each other, an etching boundary of each
of said dummy bridges being located below the middle of said strips;
a pair of first rounded portions formed with a first thickness at the beam emitting side of each
of the slots, partially extending from the adjacent strips; and
10 a pair of second rounded portions formed with a second width at the beam entering side of
11 each of the slots, partially extending from the adjacent strips.

1 21. The tension mask of claim 20, with the relative position of each of the slots at the
2 beam entering side with respect to the beam emitting side being shifted toward the center of the
3 tension mask as the locations of the slots come closer to the periphery of the tension mask.

1 22. The tension mask of claim 20, with the relative position of the gap between the facing
2 dummy bridges being shifted toward the center or the periphery of said tension mask as the locations

of said dummy bridges come closer to the periphery of said tension mask.

23. The tension mask of claim 20, with said plurality of real bridges being recessed by a predetermined depth from the top surface of said real bridges, and the thickness of each of said real bridges being smaller at the center than at the periphery of said real bridges.

24. The tension mask of claim 20, with each of said plurality of real bridges having a planar top surface.

25. A method for manufacturing a tension mask for a color cathode-ray tube, comprising:
depositing photosensitive layers over the top and bottom surfaces of a foil;
aligning an upper exposure mask with a pattern including a plurality of parallel upper light transmission portions arranged in lines over the top surface of said foil;

aligning a lower exposure mask with a pattern over the bottom surface of said foil, the pattern of said lower exposure mask including a plurality of parallel lower light transmission portions arranged in lines, a plurality of first light shielding portions intersecting adjacent lower light transmission portions among said plurality of parallel lower light transmission portions, and a plurality of second light shielding portions partially extending between the edges of the adjacent lower light transmission portions;

exposing said photosensitive layers uncovered with the lower and upper exposure masks using an exposure light source;

13 removing said upper and lower exposure masks from said foil and developing the
14 photosensitive layers remaining on said foil; and
15 etching said foil having undergone the developing process.

1 26. The method of claim 25, with said foil being of a steel material.

2 27. The method of claim 26, with the width of each of said upper light transmission
portion being two or more times larger than the width of each of the lower light transmission portion.

28. The method of claim 26, with the pattern of said upper exposure mask further
comprising a plurality of light shielding portions intersecting the adjacent upper transmission
portions, corresponding to said first light shielding portions of said lower exposure mask.

29. The method of claim 28, with the width of each of said light shielding portions of said
upper exposure mask being smaller than the width of each of said first light shielding portions of
3 said lower exposure mask.

1 30. An exposure mask for use in the manufacture of a tension mask for a color cathode-
2 ray tube, comprising a pair of upper and lower exposure masks to be aligned over the top and bottom
3 surfaces of a steel foil, respectively, to accommodate exposure of photosensitive layers deposited
4 on said steel foil, said upper exposure mask having a pattern including a series of parallel upper light

5 transmission portions arranged in lines, said lower exposure mask comprising:

6 a pattern including a series of parallel lower light transmission portions arranged in lines;

7 a plurality of first light shielding portions intersecting adjacent lower light transmission

8 portions among said series of parallel lower light transmission portions; and

9 a plurality of second light shielding portions partially extending between the adjacent lower
10 light transmission portions.

31. The exposure mask of claim 30, with the width of each of said upper light
transmission portion being two or more times larger than the width of each of said lower light
transmission portion.

32. The exposure mask of claim 30, with the pattern of said upper exposure mask further
comprising a plurality of light shielding portions intersecting the adjacent upper transmission
portions, corresponding to said first light shielding portions of said lower exposure mask.

33. The exposure mask of claim 32, with the width of each of said light shielding portions
of the upper exposure mask being smaller than the width of each of said first light shielding portions
of said lower exposure mask.